The MAC Flyer

MARCH 1977

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The MAC Flyer

For Greater Efficiency
in MAC Air Operations

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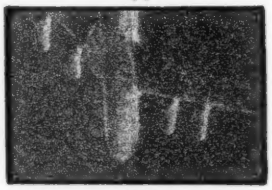

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Honorable Mention, 1976 MAC Flying Safety Writing Contest

The pilot needed all the help he could get when one of the helicopter's engines quit in a 200-foot hover.

Luck, Skill or Divine Intervention

by Lt Col (col selectee) Jay M. Strayer
Naval War College
Newport, Rhode Island

"Ka-pow!"

The noise and the jolt made his heart feel as if it were going to stop, and again he was awakened by the sound of a perfectly healthy helicopter engine suddenly gone bad. As always after the dream, the cockpit still seemed more real than his bedroom. It took awhile to get his head together-and longer for the perspiration to begin to dry.

The H-53 flight that triggered this recurring nightmare had occurred in Thailand during the Vietnam War, at a time when the Air Force was critically short of experienced helicopter pilots. He was squadron standardization officer—and one of only four pilots experienced in helicopter operations; the rest were ex-welded-wing drivers.

He had everything going for him. An exciting combat tour, Jolly Green parties that rivaled any in history and a camaraderie with the Sandies, Spads, FAC's and fighter pilots that he would never forget. He had faced many in-flight emergencies, handling them routinely and easily, but he was confident he could handle anything, even the rare dual engine failure and the flameout autorotation that would result. But, every H-53 he had flown ran like a top; maintenance was superb. Why shouldn't he be confident?

That was the situation when he started out on this particular flight. The young captain getting his Night Recovery System (NRS) lesson had come from KC-135's and still jestingly called the cyclic the "yoke." Nevertheless, he was an excellent pilot and did not require the close watch that so many did.

The scheduled flight profile included day aerial refueling practice as well as Night Recovery System training. He had given the same briefing many times; had it memorized so that he barely glanced at the briefing guide. "We'll shoot one instrument approach, navigate down to the NRS practice area and drop our two PJ's off while it's still light. You two guys come up on your radio about 30 minutes after sunset. We'll plan

to tap the tanker about that time, so it should be good and dark for the NRS work by the time we finish. I'll set Captain Smith up for a night search and simulated recovery of the two survivors after the refueling. If we can get a couple of good ones in, we'll pick up the PJ's and come back to the base. Any questions?"

The weather was hot and muggy, as usual, and their Nomex flight suits added to their discomfort. Sweat poured off both pilots as they pressed through the checklist. The T-64's whined into life, and the aircraft rocked gently as the six main rotor blades were brought up to 100 percent r.p.m.

Although the bird was heavy, it fairly leaped into the air from the thrust of the twin engines. No sweat, he thought. With full confidence in himself and his machine and at ease with his student, he then let his mind wander back to the States and home.

He was jerked back to reality. Captain Smith was just saying, "Jolly 33 going missed approach."

"Okay," he answered. "Let's find King 21 and see if you're as good at getting fuel as you are at flying instruments." Fixed wingers, he thought to himself, always tough with the instruments. Smith was good at giving fuel from a KC-135; we'll see how good he is at taking it.

After the PJ's were dropped off in the NRS training area, Captain Smith lifted the helicopter off to meet the tanker. "Hello, King 21; this is Jolly 33, over."

"King 21 here; go."

And so it went, just like the instrument phase; Captain Smith knew what he was doing. This guy doesn't need me, thought the IP as he started down the garden path.

Captain Smith dropped off the tanker after taking on 3,000 pounds of fuel, a significant decision as events were soon to prove. Even at a heavier weight they could have maintained the required NRS 200-foot hover, but the IP had told Smith to take on only 3,000 pounds; he didn't really sort out the reasons why—just told him to do it.

Darkness was closing in on the twilight as they headed to the NRS training area and made contact with the PJ's.

"Hello, Barracuda; Jolly 33 here. Set up your strobe light, please."

"This is Barracuda; we think we should abort the mission. There's a big thunderstorm coming up from the southeast. Request you pick us up ASAP or we may have to spend the night here."

"Roger, Barracuda; be right there."

As Jolly 33 approached the area, an abandoned airstrip, the IP could see the advancing storm. It was big, dark, and foreboding. Lightning occasionally flashed across the sky. He could recover his PJ's, but none too soon.

The wind was picking up and the thunder bumper moving in fast as the Jolly settled onto the runway. The PJ's piled aboard and Smith lifted the bird into a gentle hover.

"We've got a couple of minutes, Smith," the IP said. "Maintenance worked on the hover coupler, so we should ops check it again to make sure it's working okay. Go ahead and pull her up to a 200-foot hover and engage the coupler. It'll give you a chance to see what it's like hovering over trees."

Smith engaged the coupler. Both it and the radar altimeter hold feature worked perfectly. Then, he let go of the main controls and maneuvered the ship forward over the trees, using the small trim control stick.

Look at that beautiful engi-

neering ingenuity, thought the IP. The ship's smooth, automatic hover capability never failed to awe him.

"Ka-pow!" An ear-piercing explosion that could mean but one thing. Engine failure!

The hovering giant hung motionless and all activity seemed to stop. Power failure in a helicopter cannot come at a more critical moment.

Smith froze at the controls.

The IP reacted, but sluggishly, like a slow motion film of a man running for his life. After a long time, he began reading the instruments and felt the aircraft settle. And then a tumult of thoughts . . . number two's gone . . . did the PJ's get strapped in? . . . and the flight mech . . . he was giving hover instructions at the cargo door . . . how tall are those trees? number one's at full power . . . why doesn't Smith react? . . . oh, God, what's the bold face procedure for a lost engine? . . . r.p.m. is deteriorating . . . rapidly . . . this sorry sow is going to kill us . . . can't make it to the runway . . . damn, it's dark . . . can't see a thing . . .

Finally, after an eternity, he reached up and slammed both throttles forward—step one in the bold face checklist. Now he grabbed the controls and screamed, "Leggo, I've got it! Turn your lights on!"

As the huge beast struggled to stay out of reach of the trees below, the second bold face step came to him. "Jettison the tanks, jettison the tanks," he screamed over and over until the FM leaped from the cabin, broke the switch guard safety wire and pushed the jettison switch.

"Only one tank went," a PJ yelled. Repeated attempts to jettison the remaining tank were fruitless, but the bird's rate of descent slowed perceptibly now that it was 1,500 pounds lighter. The remaining engine strained—over-torqued and over-temped. The IP looked for a place to land; all he could see were trees, with their limbs beckoning to him like a spider's web to a fly.

Not daring to take his eyes off his outside reference, he was flying purely by instinct—without looking at the instruments. He could tell by the sound that the rotor speed, his last thread of life, was dangerously low. "Say my r.p.m.," he yelled.

"Eighty-four percent," came the frightening reply. Far below the 92 per cent minimum listed in the Dash One.

Amazingly, Jolly 33 was still flying. He couldn't turn her around, and he had no place to land. Intuitively he decreased the collective,

The Chopper seemed to hang motionless in the sky.

trading precious altitude for even more precious rotor turns. The searchlights showed nothing but trees. He continued to pump collective and directed the FM to read off his r.p.m. It was steadily rising, 86 percent . . . 87 percent . . . 89 percent . . . 90 . . .

"To hell with the book! It's flying at 90 percent, and there's no more altitude left to give up!"

Slowly, painfully, the big ship began moving forward. But it continued descending, losing more critical altitude, scarcely missing tree limbs that reached out as it struggled to achieve translational lift. The IP talked aloud to himself, to God, to his airplane, to his crew ". . . come on, baby . . . you're flying now . . . help me, . . . crew, prepare for crash landing . . . come on . . . we're moving . . . activate the fuel dump switches . . . should have called for that before . . . come on . . . a little more . . . please, no more tall trees . . ."

The Jolly surged forward suddenly—that unique helicopter phenomenon, translational lift. It was flying!!! "Go, go, go," the crew cried. The r.p.m. came up slowly; airspeed and altitude increased ever so gradually as the fuel was being dumped.

The abandoned airstrip was about to be enveloped by the approaching thunderstorm, so he headed for home 40 miles away. He coolly brought Jolly 33 and its happy crew into the blocks and shut down. That beautiful number one engine. Like a thoroughbred race horse, it had given its all.

Later, as the IP headed toward the maintenance debriefing room, his legs weakened until he could barely support himself. He stepped into the latrine and spent a long time thinking about what might have been. "What if's" rang in his head. What if I'd taken on more gas? What if I hadn't remembered to activate the dump switches? What if I'd forgotten to get both throttles full up? What if I'd been too inexperienced to decrease collective? What if . . . What if . . .

Yet he *had* pulled them out. But how? It might have been blind fool luck; he had always considered himself lucky. It could have been skill, or his training. He had been taught to insist on sharp crew coordination and to memorize bold face items. Maybe it was experience; he had learned the trick of collective pumping years ago when he was flying H-19's onto Mount Peavine out of Stead AFB—where a couple of rotor turns at 9,200 feet meant the difference between flying and an unplanned landing.

But the IP had been humbled this night and he knew where his luck and skill had come from.

His strength coming back, he headed for the maintenance debriefing. On the way, his head lifted slightly as he very distinctly said, "Thanks."

ABOUT THE AUTHOR

Lt Col Strayer is a 1956 graduate of Ohio State University where he received his Air Force commission through the ROTC program. He was awarded pilot's wings in October 1957 and graduated from helicopter training in 1958. Except for 18 months during which he flew T-29's and C-131's, Col Strayer has been assigned to helicopters. He has flown the H-13, H-19, H-21, HH-43, and HH/CH-53. He has served four overseas tours—in Germany, Turkey, Nakhon Phanom RTAB, Thailand, and at Udorn RTAB, Thailand. He is presently serving at the Naval War College.

Safety Writing Contest

The Great C.R. Terror T-Shirt Caper

That's right, C. R. Terror T-shirts. Be the first in your local flying area to sport one of these little dandies, skillfully woven of *real cloth,* with the Master Manipulator's colorful countenance boldly emblazoned on the pectoral region. And you can have one of these classics by entering the 1977 MAC Flying Safety Writing Contest.

To stimulate competition, the staff of MAC's greatest flying safety magazine is resorting to Madison Avenue techniques. Each entrant in the 1977 contest will receive a C. R. Terror T-shirt whether the story wins or not (one of the few good deals still available to nonselectees). Look out, Fleagle! There are, of course, some rules (who ever heard of a contest without rules?). Follow them or—sorry—no T-shirt.

Anyone can enter. The official prizes (desk set or wall plaque) go only to contest winners who are military members or civilians assigned to MAC active or Air Reserve Forces; the stories of winners, regardless of status, will be published in THE MAC FLYER.

Entries must be original, unpublished, related to flying safety, and should be between 1,000 and 3,000 words long. That's about six to 14 double-spaced typewritten pages, give or take a page or two. (In other words, old commissary lists, first drafts of APR's, or other such attempts to defraud us of a T-shirt will be met with undisguised contempt.) Type your epic, double-spaced, in two copies and attach a cover sheet to each. The cover sheet must include the story title, your name and address (military, if applicable), and a short biographical sketch. Mail your entry to:

MAC Flying Safety Writing Contest
MAC/IGFE
Scott AFB, IL 62225

Entries must be postmarked by 31 March 1977 and be received at THE MAC FLYER on or before 7 April. Or no T-shirt!

Sporting a C.R. Terror T-shirt is Linda LePage, a member of the Scott AFB Aero Club, who is working on her commercial license and helicopter rating. Why her interest in flying? For one thing, her husband is Frank LePage, a retired USAF lieutenant colonel and former MAC pilot. (photo by SrA Don Smith, Det. 1, 1361st AVS)

Is flying safety really paramount? Or is it placed near the bottom of a long list of priorities?

Convenient Flying Safety

by Maj Orlen L. Brownfield
Associate Editor

"That concludes the briefing, Gentlemen. Remember, flying safety is paramount."

"That's a joke," an old captain said, as he and two other younger navigators left the briefing room. "Safety is paramount when it's convenient."

"What do you mean, Bill?" the lieutenant asked. The third member of the group looked at the youngster and shook his head almost imperceptibly. He knew that old Bill was a thrice-passed-over captain and such questions were bound to get him up on his soapbox.

"C'mon, Lieutenant, open your eyes," Bill gestured in mock disgust. "We're supposed to be flying a six-shipper today and three of the birds are alfa three. But those maintenance toads will get 'em in commission in time to make the last drop."

"So what's new?" the lieutenant shrugged. "Like the ops officer says, 'You gotta be flexible.' "

"That's right, sonny," Bill continued as the trio crossed the street headed for the snack bar, "and just look at this weather. The forecaster said we'd be lucky to have VFR minimums on the low level route—but we'll take off for a look-see, like the mission commander says; and once we get airborne, there'll be no turning back. We're damn lucky we haven't lost one pulling stuff like this!"

"No, I don't buy that, Bill," the third man said. He was a captain too, though considerably younger. "MAC and this wing have a flying safety record that even the commercial airlines envy."

"Like I said: luck. But one of these days, one of us is going to be talked into taking a bird with a sick radar and end up buying the farm for it." Bill had memorized his speech well. "It hasn't happened yet, but it will."

The lieutenant took *his* turn. "Oh, wait a minute, Bill. Nobody's going to take a bird with a safety-of-flight writeup."

"Don't you believe that," Bill was raising his voice now. "Some of these young kids we've got running crews now are so gullible they've bought a lot of swamp land in Florida."

The three navigators made their way through the line at the snack bar and were finally seated with the usual gourmet before-flight-grease-burger and french fries in front of them.

"Another thing that makes me laugh at this safety bit," Bill said between french fries, "is—you know why I'm still a captain and some of my buddies are looking to make LC this time?" He looked at his juniors—they shrugged.

"Well," he began, "we were in Hickam, headed for Guam and ACP released us—no inbounds, they said. And me and the AC, we're on

our second beer when this dude calls back and says he made a mistake—we're alerted." Bill took a big bite of his Starlifterburger and continued. "The AC was a young fellow, but he tried to turn them down. The guy on the horn starts talking about messages to the wing commander and all that stuff. So the kid says, 'Okay,' and he comes back to tell me. 'Like hell!' I says, 'no way! You can find yourself another navigator for this one.' Well, they found another crew but picked up a delay. But they stuck us with a crew delay—which got me on the carpet later."

"So what happened?" the young captain asked.

"Well, when it was all over, they decided that I was right and stuck the command post with a delay." Bill grinned and wiped the ketchup from the corner of his mouth.

"And that got you passed over for major?" the lieutenant challenged.

"Nobody will ever admit it," Bill continued. "But when my next OER came due, I got an 8-3. And my last seven had been 9-4's. I heard that someone a little higher than squadron level sent it back for rewrite. I didn't have a 'can-do' attitude. Anyhow, that 8-3 was right on top when the folks at Randolph were picking the future leaders of the Air Force."

It's sometimes easy to look away from the real facts—ops pressure, maintenance pressure, peer pressure.

Sour grapes, the two younger guys thought. But when only two aircraft got airborne on time, their thinking began to change. And when the AC in number two tried to join up on lead—without VFR conditions—the perspiration index got pretty high before everyone decided to call it quits. It was a *training* mission. Maybe old Bill was right.

•

The world, regulations, and faces have changed. Old Bill has no doubt been RIF'ed and is selling real estate somewhere—probably unaware of any contribution he might have made to flying safety. But in the mind of one of those navigators flying that day, Bill had planted a seed of doubt: Were those oft-heard words, "Flying safety is paramount," an axiom, lip service, or a challenge? Maybe it *was* a matter of convenience.

While the safety statisticians keep track of the dollar value lost and try to pin-point the cause in a nice, neat accident package, it's sometimes easy to look away from the real facts—ops pressure, maintenance pressure, peer pressure.

•

Fledgling airmen are taught never to compromise flying safety practices, that safety is *always* paramount. But as the aviator matures and ages, his experiences indicate that there may be some exceptions to the rule. War is one. When life and limb are hanging in the balance, good safety practices are sometimes altered by necessity. And during humanitarian operations, crews have been pushed to the limit of endurance. So there are exceptions, and the old adage picks up a parenthetical addendum—Flying safety is paramount (but winning the war is more important) or flying safety is paramount (but saving lives is more important). And now

many experienced aviators, ops types, maintenance officers, traffic troops, and commanders might think that any rule that has one or two exceptions must surely have a few more. How about these?

- **Flying safety is paramount. (But is operational commitment more important?)**
- **Flying safety is paramount. (But does it show up on the "report card"?)**
- **Flying safety is paramount. (But what harm is a couple more drinks?)**
- **Flying safety is paramount. (But aren't on time departures more important?)**
- **Flying safety is paramount. (But doesn't training have a higher priority?)**
- **Flying safety is paramount. (But should we hang out the unit's dirty laundry by submitting a hazard report?)**
- **Flying safety is paramount. (But I never need more than a couple of hours of sleep.)**
- **Flying safety is paramount. (But you can't execute a go-around when you're flying lead, can you?)**
- **Flying safety is paramount. (But the wife and kids are expecting me home for Christmas, New Years, Thanksgiving, etc.)**

You can probably add a lot of your own "buts"—the list is by no means complete. MAC is not the only flying organization concerned about compromising flying safety. The truth is that the problem of convenient flying safety exists wherever members of the aviation community congregate.

LCDR Frank Stauts, writing in the U.S. Navy's *Approach* magazine, gave his views on the same subject:

"The operational imperative, 'can-do' spirit, and aggressive nature of the naval aviation community, leads us all to make that same (wrong) decision. As a result, we fly . . . aircraft under the most demanding conditions faced by any aviators in the world, when we are often fully aware that they are marginally safe before we take off . . . Fortunately, in the vast majority of cases, nothing happens . . . Why do we take the chances we do when we really don't have to? Or, why do we say safety is paramount if we really mean to say the operational commitment is paramount? Is our . . . safety record . . . a laudable goal, or is it merely window dressing for the public? Lastly, do our commanders really know what we operators are doing? Do they really want to know?"

"Do our commanders really know what we operators are doing? Do they really want to know?"

So you see, other military services appear to have a like problem. And you might have guessed that civil aeronauts aren't immune either. And here another compromise of flying safety gets into the picture. Whether you're flying a Cherokee 140 at $18 an hour or operating the world's largest airline, safety can get expensive. Flying safety is paramount. (But are dollars more important?)

There are many players in the "fly safe scenario"—a cast of thousands—from the highest ranking mogul to ground controller and baggage handler; but the stars are the cockpit crew—the final responsible party, the guys who can say "no."

Is flying safety *really* paramount? That's *your* decision.

Mishap with a Moral

Over the Beacon at Gambell

It was a routine, scheduled passenger and cargo flight. A healthy twin-engine turboprop married up with two confident pilots for a 15-minute trip.

At 1327 Bering Daylight Time, the Fairchild F-27 departed Savoonga, a small airport on St. Lawrence Island west of Nome, Alaska. Its destination was Gambell, another small airport on the northernmost tip of the island.

The destination weather was characterized by low ceilings and low visibilities. Sea fog was reported moving in an easterly direction across the airport and toward the mountain.

Shortly after departing Savoonga, the crew tuned in and received the NDB at Gambell, a facility operated by the airline. After shooting four approaches off the NDB—and sighting the runway several times without being in a position

to land—the crew decided to try again.

"A heading of 155 from the beacon ought to do it," the first officer remarked. The beacon, located approximately a half mile north of the airport, was also the missed approach fix. Approach procedures call for aircraft to fly a heading of 155 degrees to the beacon and then proceed visually to the airport. The missed approach is a right turn at the beacon, climbing to 1,600 feet on the 335-degree radial.

The aircraft passed just east of the beacon on a heading of 140 degrees and continued on that heading for 28 seconds. While the pilots were peering through the weather that allowed intermittent visual contact with the ground, the aircraft slammed into a hill at 424 feet MSL.

What Happened

The NTSB determined that the probable cause of the accident was that the flight crew had failed to adhere to prescribed company instrument approach procedures while attempting to land in adverse weather conditions. The NTSB also found that weather in the area was below authorized minimums for an approach. The airfield rotating beacon was also inoperative, a factor that could have added to the crew's difficulty finding the field. (The accompanying illustration depicts aircraft track during its repeated landing attempts.)

Here are selected excerpts from the cockpit voice recorder from the time the aircraft departed Savoonga.

GROUND RADIO: *I need your off time from here.*

FIRST OFFICER (transmitting): *Uh, the on times there?*

GROUND: *Yeah, on times—I mean, what's your off time? I didn't get it.*

FIRST OFFICER: *Off times were two five, two seven, 15 minutes to Gambell.*

GROUND: *Uh, roger; you're off at two five, two seven, estimating Gambell at one—fifteen minutes; I got your on times, already.*

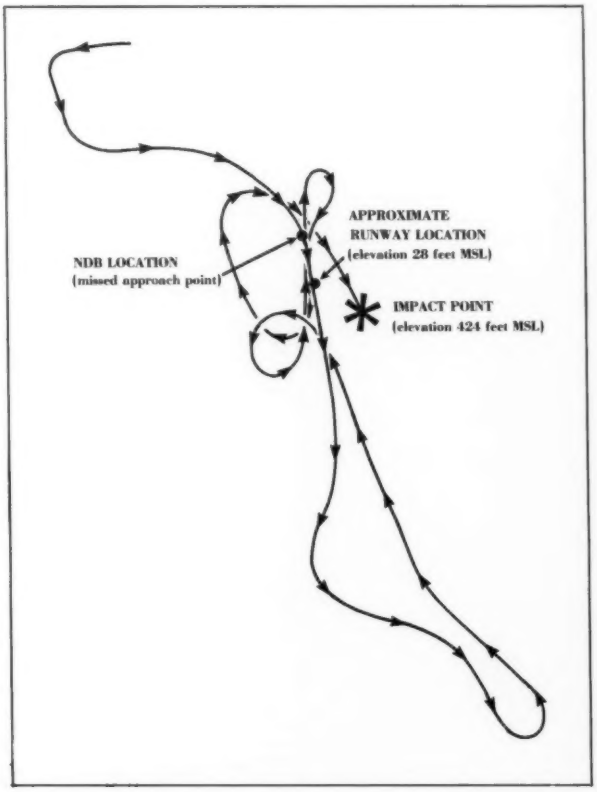
FIRST OFFICER: *Okay, thank you.*

CAPTAIN (to First Officer): *Hang up now.*

(Laughter)

FIRST OFFICER (to Captain): *Okay, say "Good night, Alice."*

CAPTAIN: *Good night, Alice.*



Approximate aircraft track during the last 17 minutes of flight.

The jovial attitude continued throughout the flight. We pick up the conversation again as the craft nears its destination.

GROUND RADIO: . . . *partial obscured sky, visibility one to one and a half miles—just a minute—one mile to half mile with and fog . . .*

CAPTAIN (to First Officer): *Mile and a half mile she said?*

(Laughter)

For a minute the captain and first officer discuss the visibility.

CAPTAIN (to First Officer): *Anyway, we're going anyway. Call them.*

FIRST OFFICER (to Ground): *Understand; uh, the visibility a mile to a mile and a half?*

GROUND: *Roger, roger. Sometimes about five miles; it's very hard to tell.*

For the next three or four minutes, the pilots discuss three-wheeled Hondas, fog, and a better location for the airport. Now nearly 11 minutes into the flight, the pilot reduces power for descent.

FIRST OFFICER (to Captain): *Which way you comin' in from?*

CAPTAIN: *Huh?*

FIRST OFFICER: *What way you going to come in from?*

CAPTAIN: *Well, we'll take a look at it this way [north]; then, ah, then take a look at it coming in from the other way [south].*

With the beacon tuned and identified, the captain shot several approaches, descending as low as 300 feet below minimums before spotting the runway too late to land. We pick up the conversation on the fourth attempt.

FIRST OFFICER (Announcing airspeed): *One ten.*

FIRST OFFICER: *Hundred feet.*

CAPTAIN: *Full flaps.*

FIRST OFFICER: *Got the runway in sight.*

CAPTAIN: *Yeah.*

(Laughter)

CAPTAIN: *I think we're too late.*

Ground witnesses believed the turboprop actually touched down on the runway during this approach.

CAPTAIN: (Establishing a positive rate of climb): *We'd never stop.*

FIRST OFFICER: *What?*

CAPTAIN: *We might have stopped.*

UNIDENTIFIED VOICE: *Off the end of the runway.*

With his F-27 climbing, the captain turned the craft to the right, over the water. With the ADF guiding him, he turned north on downwind leg.

FIRST OFFICER: *At least we saw the runway that time.*

(Sound of power reduction)

FIRST OFFICER: *One fifty-five heading; perfect.*

FIRST OFFICER: *Okay, we're over the beacon.*

CAPTAIN: *Beacon right now, final flaps, gear down.*

(Sound of gear extending)

FIRST OFFICER: *You're a little fast.*

CAPTAIN: *Yeah, I know.*

FLIGHT OFFICER: *going down . . .*

Alaskan State Trooper Gilbert Pelowook, a passenger on the F-27, was presented the Flight Safety Foundation Heroism Award for saving the lives of many of its occupants. Using a piece of metal from the wreckage as a shield against the fire, he made repeated trips into the burning hull and assisted many of the injured to safety.

Ten seconds later the CVR recorded a high-pitched whistle, followed by words of exclamation and finally the sounds of impact.

Seven passengers and three crewmembers were killed and the aircraft was destroyed by impact and fire. One crewman and 21 passengers survived.

Adapted from NTSB Aircraft Accident Report Number 76-1

All pilots have made mistakes. But there are few around who made them during crucial moments.

An Unforgiven Error

It was the kind of day that makes a person glad he had joined the Aero Club: clear, calm, and not cold enough to cause discomfort. The pilot, who held a commercial certificate and had logged over 4,000 flying hours, was looking forward to a pleasant flight in his light, single-engine plane.

Then a minor snag. The pilot had a problem, probably a flooded engine, when he attempted to start the aircraft. When he finally got it cranked, he revved it up at an unusually high r.p.m. for approximately 30 seconds, then throttled back and began taxiing. He was unaware that the high power setting, combined with low oil temperature, had ruptured a line in the oil cooler. Oil streamed from the engine as he taxied. Still more oil spilled onto the ramp as the pilot completed his runup. But the engine kept running, and the small craft was soon airborne.

About five minutes after takeoff, the pilot notified approach control that he had lost all oil pressure and was returning to base. Several large, open fields were available for an emergency landing and, as he pressed on toward home base, he flew directly over the center of one of them.

The engine seized just as the aircraft reached the edge of the field. The pilot was now faced with the choice of continuing straight ahead into a flooded river or turning toward another field bounded by trees. He elected to turn—and then made what was to be his final mistake.

The aircraft was equipped with a system which automatically lowers the landing gear when the airspeed drops below a certain point; there is also an override feature to cancel this automatic function. The pilot could have used the override—but he didn't. The aircraft manual warns that the glide ratio is cut in half with the gear down.

As the aircraft neared the trees bordering the field, its airspeed decreased and the gear came down. The glide angle steepened. The pilot turned in a desperate attempt to miss the trees, but it was too late. The aircraft hit the trees and was destroyed by impact and fire; the pilot and his passenger were killed.

Small aircraft can be very forgiving. They are relatively easy to fly and their systems are far less complex than those of larger, higher performance aircraft. But even the simplest craft requires a basic knowledge of systems and procedures. Yet to be built is an aircraft that forgives every mistake.

Global Notes

15,000 Hours

Four aircrewmen have joined the elite group of MAC men who have earned the MAC Individual Flying-Hour Milestone Award for 15,000 safe hours: SMSgt Herman L. Gwaltney, 53 MAS, Norton AFB; CMSgt Rodgers Mulligan, Jr., 14 MAS, Norton AFB; TSgt Joseph R. Bowden, 6 MAS, McGuire AFB; and TSgt Donald R. Cortese, 62 TAS, Little Rock AFB.

Each winner received a congratulatory letter from General Carlton, MAC Commander, and the 15,000-hour patches which recognize the attainment of such a high level of experience and the contribution to the safe conduct of the command's mission.

Solves In-flight Problem

Capt William B. Kimbrell, 773 TAS, has earned the MAC Distinguished Individual Safety Award for outstanding professionalism in the face of a potentially hazardous situation. His C-130H approached the drop zone at Dyess AFB, Texas, and the navigator began his countdown. At "green light" the extraction chute was dropped into the slipstream but the chute did not inflate. Captain Kimbrell directed the loadmaster to restrain and relock the load, but the loadmaster was unable to engage the locks on the rails because the pallet had shifted slightly. The pilot then dumped the nose of the aircraft and called for more flaps in an attempt to juggle the load. It worked, and the loadmaster was able to lock the load securely. Suddenly the extraction chute inflated. To cope with additional drag, Capt Kimbrell applied max power and reset the flaps to 50 percent. Still the aircraft continued to decelerate and descend, so he ordered the extraction chute cut loose. With the chute cut free, the aircraft regained altitude and returned to Dyess for a normal landing.

Stops Runaway Missile

MSgt Lawrence F. Clark, 8 MAS, McChord AFB, Washington, was the loadmaster of a C-141 during a ballistic missile onload/offload operation at a non-MAC base. He was taking a work break at the edge of the ramp when he noticed a tractor-trailer unit loaded with a Minuteman III booster rolling backward. The tractor-trailer had been left with engine running and chocks removed in anticipation of onload; several other units, similarly loaded, were nearby.

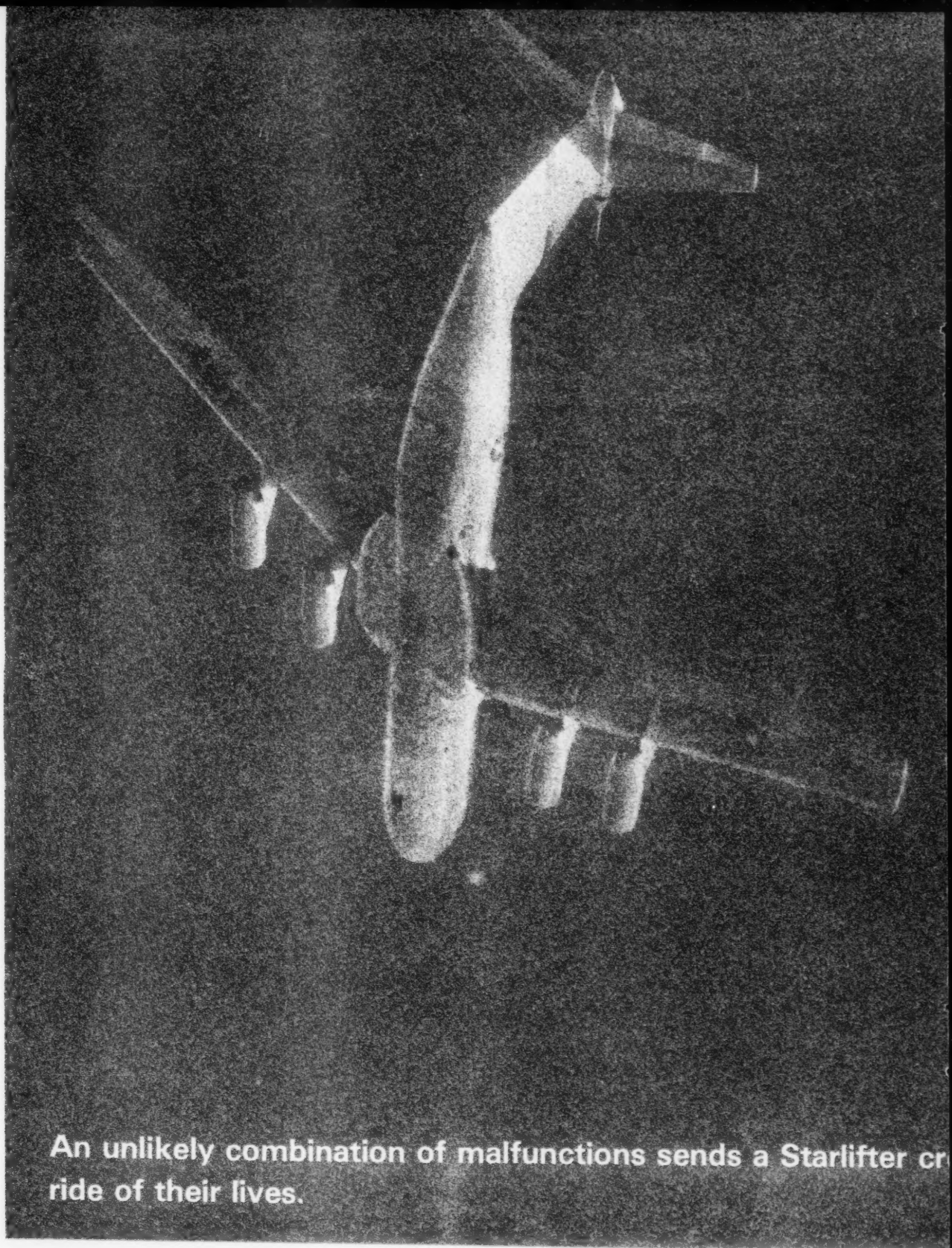
Realizing that no one else in the area was aware of the danger, Sergeant Clark began running toward the tractor-trailer, some 50 yards away. The vehicle was jackknifing as it rolled, and seemed certain to overturn unless it was stopped. Sergeant Clark reached the cab in time, and although unfamiliar with it, brought the vehicle safely to a stop.

MSgt Clark's quick reaction to a potentially catastrophic situation earned him the MAC Distinguished Individual Safety Award.

Lands It Safely

Capt Gary C. Ahrenholz of the 50 TAS, Little Rock AFB, Arkansas, has been awarded the MAC Distinguished Individual Safety Award for professionalism while coping with an in-flight control problem.

His C-130E developed severe elevator oscillations and subsequent abrupt changes in aircraft attitude en route to Goose AB, Labrador. Taking manual control of the aircraft, Captain Ahrenholz isolated the problem, which turned out to be a failing elevator boost pack. To avoid en route weather, he elected to divert 85 miles east to Pease AFB, New Hampshire, where a normal landing was made. He was credited with avoiding a possible serious accident.


An unlikely combination of malfunctions sends a Starlifter cr
ride of their lives.

ew on the wildest

Dutch Roller Coaster

by Capt Bruce L. Gumble
Associate Editor

The Starlifter was cruising at FL 390 when, without warning, the nose swung sharply to the right. The aircraft commander reacted quickly, disconnecting the autopilot and shutting off the yaw damper. As he did so, the nose snapped sharply back to the left; within seconds, the aircraft had entered an increasingly violent Dutch roll.

Unable to stop the gyrations with aileron input, the pilot turned on continuous ignition, retarded the throttles, and began a descent. As the nose continued to swing through an arc of 28 degrees and the aircraft rapidly lost altitude, the pilot directed the copilot to shut off hydraulic pressure to the rudder. But before the copilot could take action, the yaw suddenly abated; by the time the aircraft had reached FL 310, it was once again fully under control.

The crew continued a slow descent to FL 290, terminated the emergency with center, and obtained clearance back to their departure base. During the maneuver, pitch and bank angles had reached 30 and 45 degrees, respectively.

Red Diagonal

Safely on the ground, the aircraft commander entered a writeup in the 781: "After approximately one hour of flight at FL 390, acft began violent yaws left and right. A/P was turned off, yaw damper disengaged, and immediate descent was initiated. Acft was brought under control at FL 310." No symbol was placed on this entry during the crew's maintenance debriefing.

A red diagonal was added later indicating that the malfunction did not affect safety of flight.

As they cleared through the command post prior to entering crew rest, the crew discussed the incident with duty personnel. Was an incident report required? No one seemed to think so. The safety officer, contacted later by command post personnel, agreed. No incident report was submitted.

Signed Off

When the crew arrived at the aircraft the next day ready to resume their mission, the red diagonal entry had been cleared. The corrective ac-

tion: "Removed and replaced #2 and #3 yaw damper rate gyros. Ops ck. satis. IAW T.O. 1C-141A-2-8JG-2." The crew considered it a satisfactory and logical fix.

Their confidence seemed to be justified as the mission proceeded; two sorties were completed without incident during the next two days. Finally, with no cargo or passengers aboard, the 141 was cruising easily at FL 410 on the homeward leg.

The first hint of trouble came about three hours into the flight—just a quick "bump" in the autopilot pitch axis. Both pilots, remembering the earlier incident, put their hands on the yokes. A few seconds later, there was a second pitch pulse. The left-seater disconnected the autopilot.

On the annunciator panel, the CADC 2 INOP light illuminated. Warning flags came into view on the copilot's flight instruments and the vertical scale gauges began winding down. The pilot asked the scanner, who was already in the underdeck area, to check the CADC for indications of trouble. But a short time later, the warning light went out and the copilot's instruments began operating normally.

Assuming a temporary altitude hold malfunction, the pilot reconnected the autopilot. For a few moments all was smooth. Then the Starlifter's nose slammed violently to the right, and the wild ride was on.

Over the Top

The pilot disconnected the autopilot, shut off the yaw damper, turned on the continuous ignition, and tried to counteract the Dutch roll with aileron. His efforts were fruitless. Within seconds, the big aircraft was out of control, partially inverted, and plummeting toward the ocean below.

The rolling and yawing motions continued as the pitch attitude reached and passed 90 degrees nose down. The overspeed warning sounded, but was nearly drowned out by the eerie howl of wind blowing sideways across the Starlifter's cockpit. Loose objects ricocheted in the front part of the cockpit, covering the console and instruments and collecting around the yokes and rudder pedals. The copilot's vision was obscured by a crew bunk mattress in his lap and at one point by the navigator, who had not had time to fasten his seat belt. He was now being thrashed back and forth inside the cockpit.

As the area around the pilots' seats filled with debris, other crewmembers attempted to clear it away. The engineer at the panel grabbed the navigator, sailing upward toward the ceiling, and pushed him back into his seat. The crew frantically passed trash toward the back of the cockpit and hurled it through the crew entrance door, trying to give the pilots room to work.

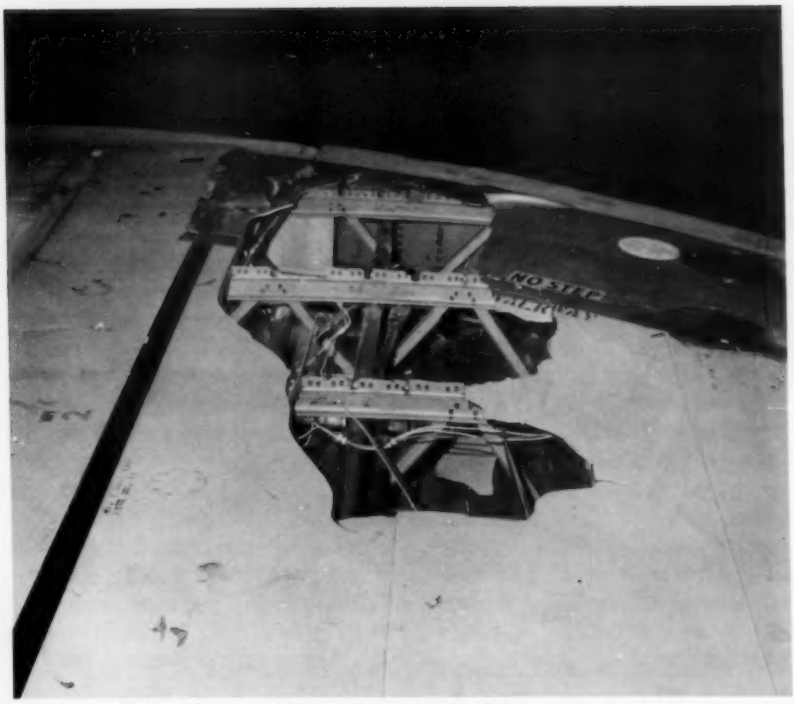
In the cargo compartment the loadmaster was also hurled toward the top of the aircraft, then slammed back to the floor. As he started upward again, he grabbed for the aluminum frame of the troop seats; but the tube broke, and he was pinned against the bottom of the overhead crew rest facility. Dropping back to the floor, he grabbed the bottom of a seat and hung on.

Finally, due to the denser air of lower altitudes, the aircraft's gyrations lessened. With control response again available and the horizon visible, the pilot began a pullout from the high-speed dive. He finally leveled the wings at 17,000.

Controllability Check

Incredibly, there was no serious injury to the crew. A scan of the aircraft showed fuel venting from the left wing; a controllability check in landing configuration at 14,000 feet indicated no control problems in handling the aircraft. The crew scanned the cockpit carefully; several switches had been moved by flying debris and had to be repositioned.

The aircraft was flyable, but the fuel state was uncertain. Number one main tank showed a steady decrease; number two main tank gauge was inoperative. The crew was faced with the choice of continuing to a MAC base or



Top of left wing, looking outboard, with a hole three by six feet. This was only part of the damage.

diverting to a nearby military field. Considering the fuel situation and the possibility of undetected structural damage, they chose to divert. A short time later, they were safely on the ground.

Assessing the Damage

Venting fuel had indicated one area of significant damage: Approximately eighteen square feet of skin was missing from the top of the left wing, above the number one main tank. A similar but smaller hole was found in the corresponding location on the right wing. In addition, large sections of both petal doors had been torn off. Total cost to repair was estimated at over $150,000.

Analysis of the flight data recorder traces showed "G" loadings between plus 3.18 and minus 3.52. The airspeed trace recorded a maximum of 450 KIAS; but due to discontinuities in both airspeed and altitude traces, the actual maximum airspeed and Mach could not be positively determined.

Multiple Malfunctions

Prior to the accident, the aircraft had experienced at least seven yaw-related flight control malfunctions. Five of these were written up in the aircraft forms, but were not classified as safety-of-flight (Red X) discrepancies nor reported as aircraft incidents. The other two occurrences were not written up.

Apparently, all these incidents had stemmed from the same malfunction which caused the eventual accident. A faulty diode in the autopilot junction box created an intermittent spurious signal to the yaw damper logic circuit. Normally, the stray voltage would have stopped there; but the yaw damper control panel had also malfunctioned, allowing the voltage to pass unchecked to the yaw damper computer with a resulting hard right rudder input. And to cap the unlikely series of malfunctions, the yaw damper had failed in such a way that the built-in ground test system—the only means available for a maintenance check of the yaw damper—*always* indicated normal operation.

Investigators also found that the published section III emergency procedures for excessive yaw in flight may have actually increased the severity of the yaw and the subsequent Dutch roll. These procedures have since been revised and amplified by 1SS-169 to T.O. 1C-141A-1. The Dutch roll recovery techniques in section VI of the T.O. are also being carefully evaluated for possible revision.

Flight control malfunctions in any aircraft are cause for serious concern. If in doubt, write it up—carefully and accurately—and report it. Don't inadvertently set somebody else up for the thrill of a lifetime.

Conflict of Interests

Midway through the fifth approach of a T-39 administrative airlift mission, the copilot, who was flying the aircraft, complained that he could hardly see the flight instruments. His hands trembled and he felt confused and disoriented. At his request, the aircraft commander assumed control of the aircraft and completed the approach and landing.

Once on the ground, the copilot felt better and decided to continue with the final leg of the mission—a short hop to home station. The aircraft commander agreed and they departed for home base where, once again, the copilot was to make the approach and landing.

During descent, the copilot lowered the flaps to 66 percent. But the airspeed was 270 knots—45 knots above the limiting speed for this configuration. Again, the copilot appeared confused; and, again, he relinquished control to the aircraft commander. After landing, the copilot was taken to the flight surgeon.

The Cause

The flight surgeon initially suspected hypoglycemia (low blood sugar), since the copilot had eaten nothing for 12 hours prior to the incident. But extensive testing did not substantiate this hypothesis, so investigators looked into the copilot's history for the two-week period prior to the flight.

They found that during those two weeks, the copilot had subjected himself to both physical and emotional stress. While on leave, he had worked on his house for a week and had not slept as much as usual. Then, for a week prior to the flight, he had been deeply involved in a special office project. A perfectionist by nature, he had become quite anxious about the progress of his assignment and was unable to sleep well.

He could not recall making any effort to eat a balanced diet during the last week and had slept for only four hours the night before the flight.

Extensive lab testing and consultation with a specialist indicated no medical basis for the episode. Therefore, it was deduced from lab data and supporting historical data that his symptoms stemmed from his recent daily routine which had caused mental and physical stress. Poor sleep, poor diet, and work anxiety had combined to create the incident.

No One Is Bionic!

Every attached crewmember is familiar with the conflict between flying proficiency and job performance. Long hours are frequently the norm, both in the office and in the cockpit. But the addition of self-imposed stress through poor eating and sleeping habits may be too much for the body to handle.

At last count, there were no bionic crewmembers in the force—just normal people with normal limitations. Do you know what yours are?

The aggressive, intolerant, hostile person may seem to get ahead of his easy-going counterpart. But the prize may not be worth the price.

STRESS

by Dr. John Dreher

Dr. Hans Selye, the dean of stress researchers and a professor at the University of Montreal, defines stress as *"the nonspecific response of the organism to any demand made upon it."*[1] This is to say, a living organism is exquisitely tuned to its environment, mental and physical, and reacts to all changes in some measurable way.

Most of us have probably come to view stress as an undesirable situation. Air pollution, noise, traffic jams, crime potential, and the like are all undeniable stressors in modern life. On the other hand, happy occasions such as a winning horse, a wedding, even the prospect of a two-week vacation are also examples of stress in the sense that they pose some degree of strain on the system and cause it to react physiologically in somewhat the same ways as the more noxious situations. Should we worry? Perhaps that isn't the best word here, but one thing is for sure: some knowledge of the mechanics of stress could be your life insurance policy.

Survival Instinct

Let's start with your body's primary goal—to survive. Nature has thoughtfully given us

a complicated biological computer that constantly monitors and adjusts all the scores of substances needed to maintain a healthy and active body. When you consider that this body is constantly under attack by its environment, that computer is something to be thankful for. The liver, for example, makes perhaps 200 decisions daily about what shall go into the bloodstream, and it does this day in and day out. Like all the other regulatory organs—the pituitary, the thyroid, the pancreas, etc.—it knows its job and is very good at it if left to its own devices. However, when heavy stress hits the body or the mind, these regulatory tasks are seriously upset, and the monitoring organs are immediately organized to fight the emergency they are told exists. You will notice the phrase, "are *told* exists," because a moment's reflection will remind you that your *mental and emotional reaction* to a stressful situation determines how violently or how smoothly your computer will correct for the threatening circumstances.

Back in prehistoric days the problem was probably more simple than it is today. "Fight or flight" was not only quite appropriate but the only choice one had. Unfortunately, the modern scene usually makes both of these impractical, although the body still operates under the original assumption. The consequences can be devastating. When you react with a violent emotion, whether it be anger, fear, or hatred, substances called catacholamines are released into the bloodstream to marshal the body's forces for battle. Like any toxic substance, catacholamines are to be used sparingly. In large amounts they are bad news for the cardiovascular system. Behaviorally, your body can actually build up deadly patterns whereby a constant light level of these chemicals is maintained, with destruction of your vascular system. A good popular explanation of this mechanism can be found in Friedman and Rosenman's *Type A Behavior and Your Heart.* [2]

While we cannot do justice to the book in a few sentences here, some of its points are well worth underscoring.

The body can lose a number of parts and still function adequately. We have two eyes, two ears, two lungs, two arms, two legs, two kidneys, and so on, that make for a redundant operation. Over and above these we have a few organs that can be dispensed with without fatal consequences: tonsils, appendix, the prostate gland, among others. However—and this is a big however—your heart, the main pump of your whole system, is indispensable. Drs. Friedman and Rosenman proceed to explain just what one does to one's heart by assuming certain behavior patterns. The *Type A* person seems almost the prototype of the "go-getter" American: he's aggressive, pathologically punctual, driven for enough time to do things, bent toward material possessions, a collector of objects, intolerant of others, and, frankly, a basically hostile person. Is this you? Let's hope not. If so, let's hope you'll want to modify this profile somewhat. The *Type B* person, probably a rarity in our society, is almost the opposite: easy-going, tolerant, slower in his actions, not particularly worried about time (many *B*'s don't even wear a watch); in short, the *Type B* is affable.

What is the effect of these attitudes on the heart? An unrepentant *A* type is twice as likely to have heart attacks as is his *B* counterpart. Being more or less constantly in an attack mode, his cholesterol levels are always high and very often he is hypertensive [has high blood pressure] to boot. Both these factors tend to cause insoluble deposits in the coronary artery system. The main points of failure are the right circumflex, the left circumflex, and the

left anterior descending branch, called the "artery of sudden death." If its lumen (pathway) is significantly narrowed by scars and cholesterol deposits, a sudden occlusion resulting from a particularly violent stress reaction can close it off completely, with fatal results. If you really are a *Type A* or have a lot of *A* tendencies, now is the time to give your heart a break by changing a few habits.

From your periodic flight physical examination you already know the emphasis put on physical condition; you should also know your physical condition depends heavily on your reaction to stress situations, which abound in aviation. Operations, particularly those of the air traffic controllers, can sneak up and force a pattern of stress reaction that could conceivably shorten your activities by several years. Now, everyone knows that pilots and controllers constantly work against the clock, and so their remedial strategies may be in different areas where relaxation is possible. Managers, security people, typists, and those who contact the public also have their own particular stressors. They may be different, but they are just as real and just as dangerous. Both the manager and security man, for instance, are responsible for large investments of property and money. The former involves himself with schedules and financing problems; the latter has a constant threshold of tension in seeing that operations are secure. Desk personnel, while not pressed for time, perhaps, are continually buffering passengers' complaints and demands. The stresses, again, may be different, but remember our original Selye definition, ". . . the nonspecific response of the organism to *any* demand put upon it."

Countermeasures

What are the countermeasures? First of all, *easy does it!* Everyday requirements of living are quite enough for your system to handle. Examine your habitual reactions and you can start the defusing process:

1. Are you constantly irritated by your workmates or supervisors? If so, your damage levels are kept high. Try to cultivate a consciously more tolerant attitude. Remember Newton's Third Law, "Action Equals Reaction." Give them some running room and things may ease up.

2. Constantly check your muscle tension. "Up tight" means just that. Let your muscles sag as completely as you can whenever you can. That little bit of rest will help.

3. Try walking and driving more slowly. A fast pace requires tension. It is also a mirror of your attitude of concern/worry.

4. Whether you are a pilot, crewman, or controller, your job will require lots of tight and fast actions at times. Don't let this carry over to the intervening times. Unstring the bow when you're not actually shooting.

Of course, you can also start retraining your system by a long-term program of relaxation and change of mental attitude. Remember, your system only does what you tell it to do, and if you keep it taut all the time, it will wear out just that much sooner. A number of books will help in this area, one of the best being Herbert Benson's *Relaxation Response.* This extremely simple program will make a new person out of you. "Stress without distress," as Selye says, is the name of the game.

Flight Safety Foundation
via *Crosscheck*

[1]Selye, H., "Stress and Aerospace Medicine," *Aerospace Medicine,* February 1973.

[2]Friedman, M. and Rosenman, R., *Type A Behavior and Your Heart,* Fawcett Publications, 1974.

The green Corvette swerved to a screeching halt just inside the gate as the security policeman, hand still raised in a halting gesture, scampered to the safety of the gatehouse.

"Careful there, m'lad," grinned the Devious Driver as the stern-faced airman approached his car. "That's a good way to become a permanent grille fixture, hee, hee. What's going on anyway? Some kind of rinky-dink exercise, no doubt."

"No, Sir," replied the guard, "just routine procedure." He pointed to a sign which read, *"I.D. Check in Progress."*

"Such tomfoolery," complained C.R. "I've got a zero five hundred show time for a high priority mission and you're demanding identification. Whaddaya think that blue sticker on the front of my bumper is—a Bicentennial logo or something? Can't you see

Vexed with base security procedures, the Master Manipulator comes up with his own entry plan to avoid a delayed takeoff.

I'm late already? My crew's waiting for their leader down at operations."

"Sorry, Sir. I'll have to see your I.D. No exceptions."

"Balderdash," C.R. mumbled. "It's easier to get into Fort Knox than it is my own home base." Thumbing through a stack of cards and bits of paper in his pigskin wallet, the Omnipotent One finally held up a laminated card and was about to shift into gear.

"Ah, Sir," challenged the guard, "that's your drivers license. I need to see your Air Force I.D."

"Whaaa—why, you're right. It's here somewhere," moaned the Paunchus Pilot, his pudgy fingers shuffling and reshuffling the stack of cards. He offered his Sears charge card, an assortment of gasoline credit cards, a restricted area badge, and even his commercial pilots license, but the guard kept shaking his head negatively.

"If you like, Sir, I could call one of your crewmembers. They could vouch for you and we could sign you in as a visitor," the guard suggested.

"A visitor?" exclaimed C.R., his puffy face now crimson with frustration. "Not on your life. I'm their leader, not their visitor. I'll not be humiliated by such a trifling matter."

His dignity ruffled, the Rotund One wheeled the Corvette around and roared off in the direction from which he had arrived. But the Master Manipulator had no intention of returning home to search for his I.D. He had another plan and the thought of it provoked an impish grin which widened as he turned off the highway onto a tree-lined dirt road paralleling the perimeter fence.

C.R. parked the car and removed his flight bag from the back. "Aha," he exclaimed, after walking a short distance, "here it is, just like I remembered it."

With a loud grunt, C.R. hurled his flight bag over the chain link fence. Then, striding over to an abandoned picnic area, he began shoving a weatherbeaten table toward the fence.

A few minutes later, the Impetuous One had propped the long table on the fence and was working his way up the makeshift ladder for a Terrorific entrance to the base.

"Neither snow nor sleet nor rain, nor chain link fences can keep this avid aviator from his appointed departure time," chuckled the Able Aeronaut as he reached the fence top. "Now here comes the challenging part." He looked toward the ground and braced himself for the long drop.

"One, two, three—yeeooww!" C.R. plunged down inside the fence, a loud tearing sound accompanying his self-styled entrance.

"I've been wounded!" moaned the Master Manipulator, rubbing his backside. "Yikes, I've ripped the seat out of my flight suit."

"Hey, you, there. What're you doing?"

C.R.'s bald dome jerked around as a burly sergeant

emerged from a small wooden building.

"Ahem, well, er—why, just on my way to work, my good man. Haven't you ever seen anyone jogging to work?" stammered the Silver Tongued Fox, retrieving his flight bag and breaking into a slow jog toward the operations building.

The sergeant eyed the round figure suspiciously as it bobbled into the distance, then disappeared into the building and picked up the telephone.

C.R. glanced back over his shoulder and, seeing that he was no longer being watched, thankfully stopped jogging as the aftermath of the previous night's libation began to take effect. Although still a half mile or more away, he could now see the operations building and his cockiness grew with each belabored step; but the cold air flowing through the rip in his flight suit was creating a discomforting posterior numbness, the likes of which he hadn't experienced since having sat in the co-pilot's seat for a 17-hour stretch on a trip with his wing commander in 1963.

He resumed his pace, but another unexpected irritant prompted him to stop, perk up his frost-reddened ears and listen. Barking dogs. The Lothario of the Airlanes had disliked dogs ever since his first amorous advance toward Tassels Taylor had resulted in a wrestling match with her protective Doberman pinscher.

He squinted his beady eyes in the direction of the barking and saw two dogs in the distance—not Doberman pinschers this time—but huge German shepherds which were closing the gap at a frightening rate.

"Dogs! They've called out the dogs on me. Yeeooww," bellowed C.R. as an acute case of white knuckleitis replaced the cockiness of a moment before. Turning it on, the Field Grade Fumbler made a beeline for the operations building at a speed which under proper circumstances would have qualified him for the Olympics. But in spite of the pumping adrenalin, he was unable to maintain the pace. Closer and closer, louder and louder, and larger and larger loomed the canine pursuers.

A few steps more and I'm safe, C.R. estimated hopefully as he approached a side door to the building. Huffing and puffing, he struggled, his flight bag weighing at his arms as if it were loaded with lead bars. C.R.'s hand clutched the door knob just as the first dog leaped toward him.

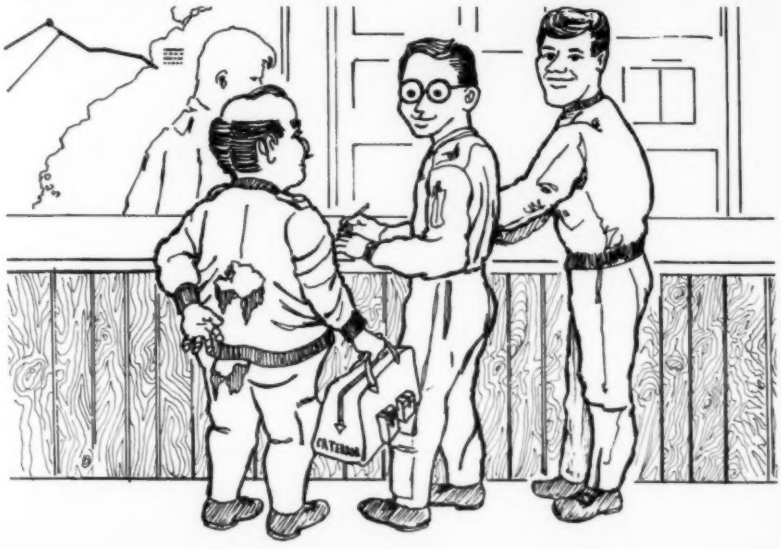
"Down, doggie, down! Good doggie, good doggie. Halp! Get away!"

The door opened and C.R. fell inside, leaving behind him a growling German shepherd with a mouthful of green flight jacket.

Shaken, C.R. paused, then raced into the men's room to catch his breath and make what repairs he could on his tattered attire. The speed at which he had covered the first 40 yards of his frantic dash had taken its toll on the now exhausted sprinter, and the dog's teeth had done likewise on his jacket.

Sammy and Blinky were completing the flight plan as C.R. strode nonchalantly into the flight planning room.

"Good morning, Sir. We



were beginning to wonder if you had overslept. We've completed the flight plan and we're ready to clear through the command post. Transportation is on its way."

"Very good, m'lads," replied C.R. with his usual pomposity. "Had a slight delay, but your leader is now taking charge. I'll sign the flight plan and watch as you clear through the command post. Good practice if you ever want to upgrade." The Master Manipulator stood back as Sammy and Blinky cleared, making certain that they remained in front of him at all times.

"Never saw the boss so polite," commented Blinky as the Terrorific Threesome hurried out the door to the crew bus pickup point. "Keeps letting us go first. Wonder what's come over him."

"Beats me," said Sammy, "but you can be very—hey, what's going on! Here comes the security police up the ramp. Maybe it's an exercise of some sort."

A blue pickup truck pulled up in front of the operations building and two security policemen got out.

"Good morning, Sir, I'm Sergeant Stacey. Sorry to inconvenience you, but we're making an I.D. card check for security purposes."

"Anything wrong, Sergeant?" asked Sam as he and Blinky produced their wallets and I.D. cards.

"Well, Sir, we're not sure, but someone reported a suspicious looking character down by the perimeter fence. We think he might have come this way," the sergeant replied.

C.R. felt the blood drain from his face. Shuffling to hide behind his copilot, he jammed both hands in his jacket pockets and sucked in his paunch as far as it would go, but it was no use.

"Who is that behind you, Captain?" asked one of the policemen.

"Behind me? Oh, that's our aircraft commander, Major Terror," answered Sammy, stepping aside.

"Your I.D. card, please, Major Terror."

A surprised C.R. suddenly looked as if a weight had been lifted from his shoulders. His composure suddenly returned and he smiled slyly, as a pudgy paw fingered a laminated, rectangular object in his jacket pocket.

"Of course, Sergeant, anything to assist in maintaining proper base security. We can't be too careful, can we?" replied the Silver-Tongued Fox in his most officious tone, pulling out his Air Force I.D. card.

"Thank you, Sir. Sorry to have bothered you. Have a good day," said the sergeant. He saluted and walked away.

"Hey, Boss. You sure came up with that I.D. card in a hurry," teased Sammy. "Did someone tip you off that something was going on?"

"Tut, tut, m'lad," boasted C.R. "Since the new security measures went into effect, I always keep my I.D. card within easy reach. That way I don't have to keep fumbling through my wallet when I come through the gate. Just flash it at the guard and drive on by. As a novice in security matters, you probably never thought of using such a procedure."

"To tell you the truth, Sir, I'd probably misplace mine if I didn't keep it in my wallet," confessed Sammy, "and I'd hate to have to turn around at the gate and drive back home to get it."

C.R. smiled benevolently at his two underlings and was the first to step into the crew bus.

"Gee, Boss," marveled Blinky, now directly behind the Pudgy Pilot, "what in the world happened to your flight suit and jacket? You look like you've been in a dog fight."

For a moment, C.R.'s spine stiffened. Then he plopped down in a seat and smiled weakly.

"Blinky, m'boy, you wouldn't understand if I told you," he sighed, "but believe me, your powers of perception are more acute than you'll ever know."

Quick Stoppers

Sabre Rattling

The T-39 instructor pilot, occupying the right seat, planned for a minimum ground roll landing on a wet runway. The weather forecast was for six miles visibility in light rain showers with a left quartering headwind of 13 knots. The computed approach speed of 112 knots was increased by five knots due to turbulence.

The Sabreliner touched down firmly about 500 to 700 feet from the approach end of the runway at approximately 115 knots. It hydroplaned and began drifting slowly right. The pilot ceased braking as the aircraft crossed centerline, then reapplied braking once across the painted stripe. Wheel lockup occurred, blowing the right main tire. The anti-skid-less T-39 continued drifting right down the runway until, at 600 feet from the departure end, it slid off the runway.

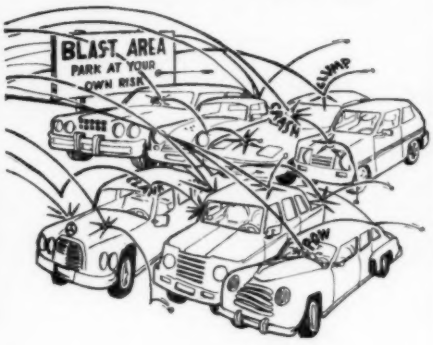
Though the T-39 flight manual indicates hydroplaning of the main tires can occur at or above 121 knots, NASA points out that this figure is valid only for tires that are spinning. Landing on wet runways may retard or prevent spin up from occurring. When this happens, main gear hydroplaning may occur at speeds as low as 103 knots and nose gear hydroplaning down to 67 knots.

Be On Your Toes

During a recent joint exercise, a load team consisting of USAF and U.S. Army types were conducting an engine-running offload of a C-130. With the aircraft in the offload area, the loadmaster began lowering the ramp. As the loading team approached, he stopped the ramp and motioned for the crew to come aboard. Several of the troops hopped on and the loadmaster again lowered away. Two Army types had not boarded the Herky but remained on the ground, immediately behind the ramp. Ouch! The ramp came down on the left foot of one of the soldiers—breaking his big toe.

Procedures call for the loading crew to remain 50 feet from the aircraft until the ramp touches the ground, and this loading crew can attest to the purpose of the procedures.

A Stone's Throw



"Hail damage? Hail, no. Just some big airplane throwing rocks at my car." How would *your* insurance company react?

The crew of the four-engine jet had experienced a maintenance delay of about 50 minutes but, finally, was ready to go. The pilot pushed the throttles up and the engines whined to 80 percent as the heavy began to taxi.

Meanwhile, on the ramp, a minor storm developed. The four TF-33's began kicking up rocks, stones and other rubble. When the storm subsided, eight POV's parked across the ramp had been damaged—broken glass and chipped paint.

There is no blast fence installed in the area, but the parking area is marked by a sign stating, "Danger—Blast Area—Park at own risk." That's exactly what the vehicle owners did, much to their dismay.

Thumbs Up

The Hercules taxied toward its parking spot in the revetment area of a foreign base as directed by the tower. Two marshallers were giving the crew signals as the C-130 approached the parking spot. One marshaller, positioned in front of the aircraft, signaled a right turn. The second, on the right wing, was keeping the wing tip clear of a revetment. As the aircraft neared the revetment both the pilot and navigator saw a "thumbs up" signal from the wing walker and believed there was sufficient clearance. Taxi continued parallel to the revetment and, though the wing marshaller continued giving the thumbs up signal, both the copilot and navigator realized they were getting too close and gave the stop order. The pilot got hard on the brakes, but it was too late. The right wing tip contacted the revetment. The wing tip marshaller was still signalling all clear until the tip struck the revetment.

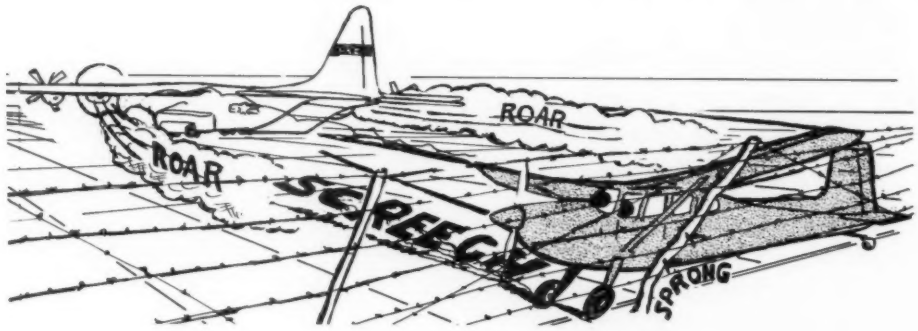
Qs

Typhoon Hercules

It isn't unusual to see ramp workers running for cover or frantically tying down equipment when a C-5 turns off the runway, but a C-130 with its outboards shut down isn't likely to produce such commotion. But there are times when it should.

A C-130 crew was about to park but a conflict arose between the ground marshaller and the crew as to the proper spot. That was finally resolved, but several government vehicles blocked the crew's view and they didn't see the small Cessna 185 parked nearby. Using normal ground idle, the pilot made a 180-degree turn into the parking spot and, swoosh, there went the Cessna skidding into a metal fence post and a barbed wire fence.

Would you believe the Cessna was not tied down and its chocking consisted of a metal chock in front of the left wheel and a rock in front of the right one?



The Big Guns

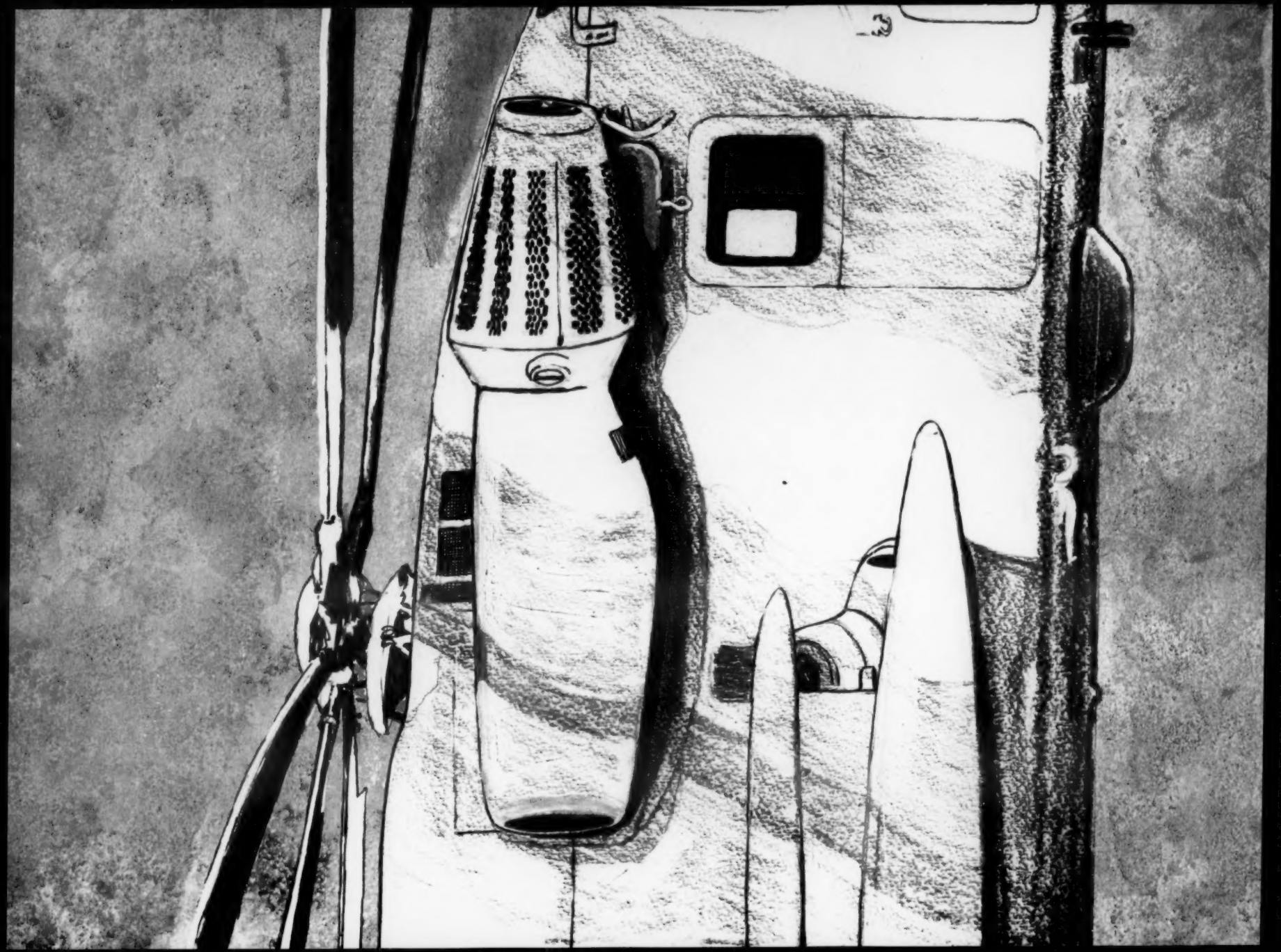
Plattsburg AFB, N.Y., is bringing out its big guns in a war on sea gulls which are causing problems for departing and arriving aircraft.

War clouds gathered as a KC-135 was making a touch-and-go landing. Suddenly, a flock of some 20 gulls flew across the runway. One of them kamikazied into the aircraft's right wing, ripping a two- by four-inch dent that cost the taxpayers $120 to repair. Gulls, attracted to the base sanitary landfull near the runway, present a severe problem. But the base is meeting the challenge. Until the problem is solved, the SOF will make frequent checks for birds near the runway and the security police will provide rapid response with—what else—shotguns. Bye, bye, birdies.

after deadline . . .

NAVAID INTERFERENCE may result without your knowing it if you fail to aurally identify the VOR's and ILS's you have tuned in. Commercial FM radio stations can block and mask VOR/ILS signals, often causing erroneous needle indications. The FAA suggests turning up the volume on navaid receivers to expose this type of interference.

NEW ACCIDENT CLASSIFICATION CRITERIA -- As of 1 January 1977, significant changes were placed into effect by Interim Change 76-3 to AFR 127-4. The regulation lists four classes of mishaps (A through D), based on injury and total damage (computed by cost). Here are the four mishap classes: DOD Class A Mishap (major accident)--damage exceeds $200,000, an aircraft is destroyed, or a fatality results; DOD Class B Mishap (minor accident)--cost of damage, injury, or illness (based on lost man-days) is $10,000 but less than $200,000; DOD Class C Mishap (incident)--damage is $250 to $10,000 or injury or occupational illness causes a lost workday; DOD Class D Mishap (incident)--damage is less than $250 but an injury or occupational illness requires restricted work activity. The reclassification of flight mishaps was necessary to standardize criteria for Department of Defense agencies. Ground accident criteria were also affected.

BEWARE OF RCR READINGS when there is ice or any other braking impediment on the runway. A T-39 pilot recently was given a braking action of "fair to good" as he prepared for landing. The IFR Supplement notes that "fair" equates to an RCR of 13 to 18 and "good" to an RCR of 19 to 23. The plane landed on the 7,000-foot runway and encountered patches of ice on the centerline and a solid sheet of ice on the last 800 to 1,000 feet of runway. The streaking Sabreliner plowed into a three-foot-high snowbank 50 feet prior to the departure end of the overrun. There was no major damage to the aircraft, but the mishap serves as an important reminder to pilots: Braking action is based on an "average" of several RCR readings. One part of a runway may have "poor" braking action while another portion may have "good." Yet the RCR could still "average out" above your minimums. Obtain as much information as possible when faced with near minimum braking conditions.

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